

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

VI TECHNOLOGIES, LLC,

Plaintiff,

v.

WOOLPERT, INC.,

Defendant.

Civil Action No. 6:21-CV-00318-ADA

DEFENDANT WOOLPERT, INC.'S OPENING CLAIM CONSTRUCTION BRIEF

(This Joint Opening Claim Construction Brief is also being filed in the following related cases:
VI Technologies, LLC v. AeroTech Mapping, Inc., Civil Action No. 6:21-cv-00297-ADA, and
VI Technologies, LLC v. Merrick & Company, Civil Action No. 6:21-cv-00316-ADA)

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I. INTRODUCTION

This Joint Opening Claim Construction Brief is being filed by Defendants in the following related cases, pursuant to this Court's Amended Standing Order Regarding Notice of Readiness for Patent Cases, which states that the Court will hold a single Markman hearing for the related cases, and this Court's Order Governing Proceedings—Patent Case, which provides for collective page limits for claim construction briefing across related cases:

- VI Technologies, LLC v. AeroTech Mapping, Inc.,
Civil Action No. 6:21-cv-00297-ADA
- VI Technologies, LLC v. Merrick & Company,
Civil Action No. 6:21-cv-00316-ADA
- VI Technologies, LLC v. Woolpert, Inc.,
Civil Action No. 6:21-cv-00318-ADA

II. TECHNOLOGY BACKGROUND

Plaintiff VI Technologies has asserted the following six patents against each Defendant: U.S. Patent Nos. 7,127,348 ("the '348 Patent"); 7,212,938 ("the '938 Patent"); 7,725,258 ("the '258 Patent"); 8,483,960 ("the '960 Patent"); 8,994,822 ("the '822 Patent"); and 9,389,298 ("the '298 Patent") (collectively, the "Asserted Patents").

In general, the Asserted Patents may be divided into two categories: (1) relating to a vehicle-based data collection and processing system for gathering imagery for the generation of large-scale maps using an allegedly novel camera array; and (2) relating to a method of calibrating sensors on a vehicle.

For the first category—the data collection and processing system—the overall system is shown in Figure 1 of the '348 Patent. In the embodiment of Figure 1, the system is mounted on an airplane:

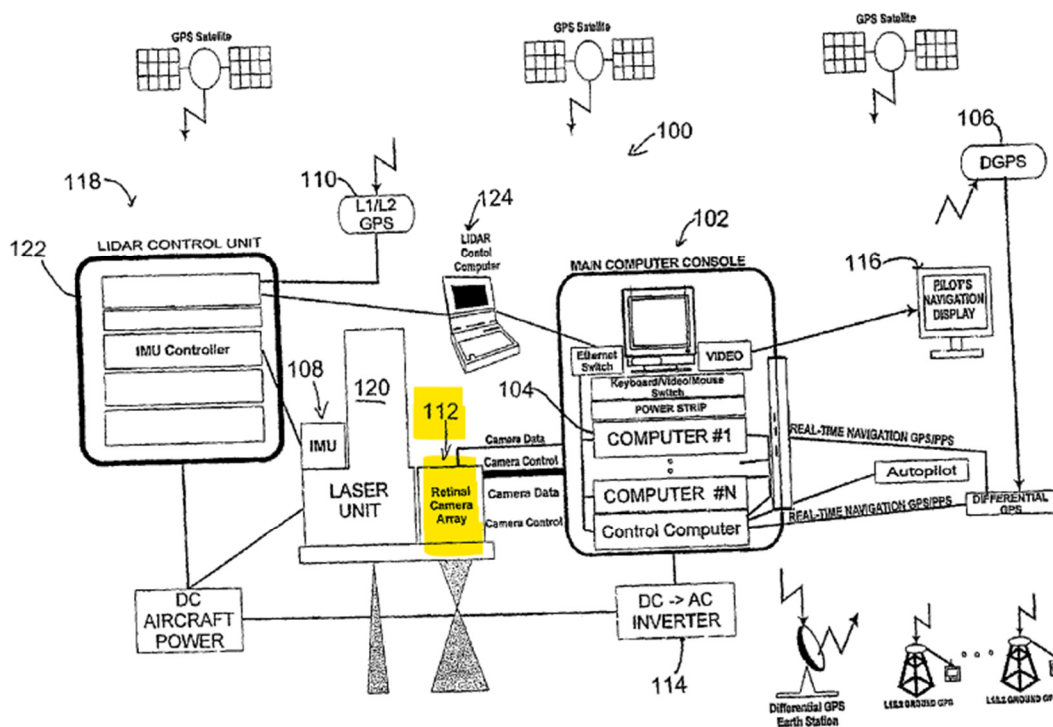
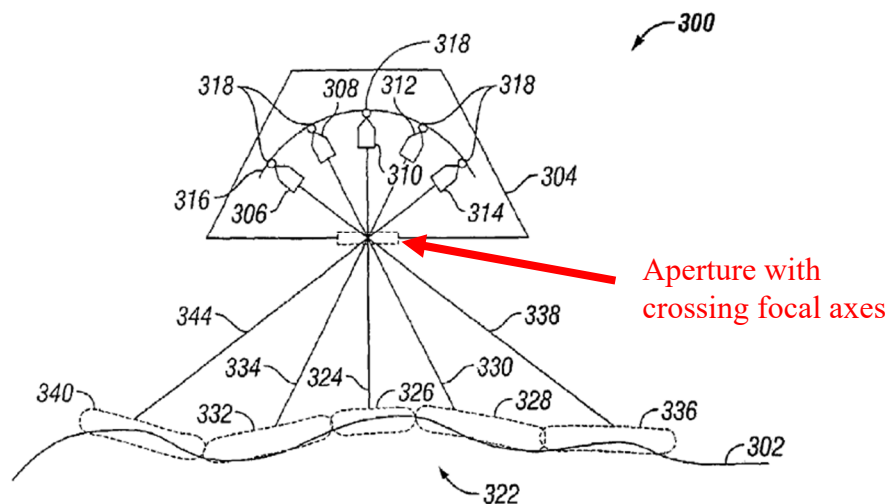


FIG. 1

('348 Patent, FIG. 1.)

The system comprises a variety of components, only one of which is allegedly novel, and only one of which is the focus of the majority of the asserted claims. That component is the "retinal camera array" **112**, which uses multiple cameras to take an aggregate picture having more pixels than any of the cameras individually. An exemplary embodiment of the camera array is depicted in Figure 3 of the '348 Patent:



(*Id.*, FIG. 3.)

In Figure 3, the aircraft would be moving toward or away from the viewer. A "5-camera array" is shown mounted to the aircraft (although other types of sensors are expressly contemplated). (*Id.*, 7:48-52, 9:1-12.) Cameras **306**, **308**, **310**, **312**, and **314** are shown in cross section and are mounted on a frame, so each camera is taking an image of a different (but potentially overlapping) area of the ground. The areas being imaged are shown in cross section and are labeled **340**, **332**, **326**, **328**, and **336**. The '348 Patent explains:

The camera array assembly **300** comprises a housing **304** within which imaging sensors **306**, **308**, **310**, **312** and **314** are disposed along a concave curvilinear axis **316**. The radius of curvature of axis **316** may vary or be altered dramatically, providing the ability to effect very subtle or very drastic degrees of concavity in axis **316**. Alternatively, axis **316** may be completely linear—having no curvature at all. The imaging sensors **306**, **308**, **310**, **312** and **314** couple to the housing **304**, either directly or indirectly, by attachment members **318**.

(*Id.*, 6:57-7:1.) One particular feature of the camera array is that each of the cameras is mounted such that its focal axis crosses the focal axes of the other cameras at an aperture in the housing **304** of the camera array. The '348 Patent also states that the focal axis intersection may have to be

above or below the aperture in certain circumstances. The aperture was not labeled in Figure 3, but the copy above has been annotated to identify the aperture. The '348 Patent explains:

The imaging sensors **306** through **314** are disposed within or along housing **304** such that the focal axes of all sensors converge and intersect each other within an intersection area bounded by the aperture **320**. Depending upon the type of image data being collected, the specific imaging sensors used, and other optics or equipment employed, it may be necessary or desirable to offset the intersection area or point of convergence above or below the aperture **320**.

(*Id.*, 8:15-20.) The '348 Patent refers to this configuration as a "'cross-eyed' retinal relationship between the cameras and the imaging target(s)." (*Id.*, 9:21-29.)

The rest of the system comprises prior art components that are typically used in prior art aerial mapping systems with conventional cameras and that are used for the same purposes in conjunction with the allegedly new camera array. These components include a GPS receiver, so the location of the aircraft at the time of imaging is known (*id.*, 5:15-32) and an AMU ("attitude measurement unit"), which gathers information on yaw, pitch, and roll data for the aircraft (the degree to which the aircraft is not horizontal in the x, y, and z directions). The '348 Patent discloses a prior art product called the Applanix POS AV for the AMU:

The present attitude measurement unit (AMU) (e.g. Applanix POS AV), uses three high performance fiber optic gyros, one gyro each for yaw, pitch, and roll measurement. AMUs from other manufacturers and AMUs that use other inertial measurement devices can be used as well.

(*Id.*, 5:3-42.)

The figures use the alternative acronym IMU (which stands for "inertial measurement unit") and the terms IMU and AMU are interchangeable. Information from the GPS, AMU, and possibly other aircraft components are used by the "mosaicing module" to "stitch" together the individual images into one large image, which the '348 Patent calls an "ortho-rectified compound

image (or 'mosaic'), without any visible seams between the adjacent images." (*Id.*, 6:15-22, 10:20-24.)

The disclosed system may also include prior art LIDAR systems. The '348 Patent explains that LIDAR "is similar to the more familiar radar, and can be thought of as laser radar," (*id.*, 10:65-67) and that "[t]here are presently [at the time of the invention] three basic types of LIDAR: Range finders, Differential Absorption LIDAR (DIAL) and Doppler LIDAR" (*id.*, 11:19-22). The '348 Patent explains that the LIDAR and cameras may be used to generate "Digital terrain models (DTMs) or Digital surface models (DSMs)." (*Id.*, 10:64-65, 11:15-18.)

III. THE ASSERTED PATENTS

The '348 Patent is titled "Vehicle Based Data Collection and Processing System," was filed on September 18, 2003, and claims priority to a provisional application filed on September 20, 2002. The '348 Patent identifies three inventors: Chester L. Smitherman; Tuy Vu Mai; and Leo J. Peters, III. The '348 Patent was assigned to M7 Visual Intelligence, LP, a predecessor to Plaintiff, VI Technologies, Inc.

Claim 1 is exemplary. It begins with a preamble stating that it concerns a system for generating a map:

A system for generating a map of a surface, comprising:

The claim next recites a GPS transmitter (e.g., a GPS satellite (future patents recite a GPS receiver rather than a GPS transmitter)):

a global position transmitter;

The claim next recites a vehicle to which the system components are secured:

a vehicle, disposed over the surface; an elevation measurement unit, secured to the vehicle; a global positioning antenna, secured to the vehicle; an attitude measurement unit, secured to the vehicle; an imaging array, secured to the vehicle, comprising:

The details of the "imaging array" are then recited, including a housing, an aperture, and multiple imaging sensors, in which the imaging sensors have cross-eyed focal axes that intersect at the aperture:

a housing; an aperture, disposed in the housing, having an intersection area therein; a first imaging sensor, coupled to the housing, having a first focal axis passing through the aperture within the intersection area, generating a first array of pixels, wherein the first array of pixels is at least two dimensional; and a second imaging sensor, coupled to the housing and offset from the first imaging sensor, having a second focal axis passing through the aperture and intersecting the first focal axis within the intersection area, generating a second array of pixels, wherein the second array of pixels is at least two dimensional;

Finally, the claim concludes by reciting a computer that is connected to the various system components and collects data from those components to correlate the images to locations on the ground in order to create the map:

a computer, connected to the elevation measurement unit, the global positioning antenna, the attitude measurement unit and first and second imaging sensors; correlating at least a portion of the image data from the first and second imaging sensors to a portion of the surface based on input from one or more of: the elevation measurement unit, the global positioning antenna and the attitude measurement unit.

* * *

The next patent in numerical sequence, the '938 Patent, is actually the first-filed patent of the Asserted Patents. It was filed on September 17, 2002. The '938 Patent is titled "Method of Using a Self-Locking Travel Pattern to Achieve Calibration of Remote Sensors Using Conventionally Collected Data," and names a single inventor: Tuy Vu Mai. The '938 Patent purports to provide "a method to calibrate an on-board remote sensing system using a self-locking travel pattern and target remote sensing data." ('938 Patent, Abstract.) The '938 Patent explains

that the "remote sensors mounted to the aircraft have to be calibrated in order to accurately obtain the absolute geophysical coordinates of the remote sensing data." (*Id.*, 1:61-63.)

The '938 Patent explains that prior art techniques sometimes used "supporting data on ground control points" to increase the accuracy of the geophysical coordinates. (*Id.*, 2:4-12.) The '938 Patent denigrates the use of ground control points, and states that there is a need for an "inexpensive calibration method." (*Id.*, 2:29-33.)

The solution, according to the '938 Patent, is to mount a remote sensor to a vehicle and then "moving the vehicle in a self-locking pattern over a target area." However, the '938 Patent does not explain what it means by a "self-locking pattern." To be sure, the '938 Patent provides at least three examples of patterns that the '938 Patent asserts may be used as part of a "self-locking," but nowhere in the '938 Patent does the inventor explain what a "self-locking pattern" means or how the patterns that are disclosed allegedly achieve this "self-locking" quality. The '938 Patent fails to distinguish the allegedly novel "self-locking" pattern from prior art aircraft flight patterns. Further compounding the confusion is the fact that the prosecution history provides no help. Nowhere in the prosecution history does the inventor explain what a "self-locking" pattern is or attempt to distinguish prior art on the basis of the "self-locking pattern" term.

* * *

The next four Asserted Patents are all continuations-in-part of the '348 Patent. The '258 Patent is titled "Vehicle Based Data Collection and Processing System and Imaging Sensor System and Methods Thereof," and was filed on October 11, 2006. Curiously, the '348 Patent has three inventors, and only one of the three '348 Patent inventors is named as an inventor on the '258 Patent continuation-in-part—Chester L. Smitherman—even though the patents appear to have identical figures and a nearly identical specification. The '258 Patent has claims similar to those of the '348

Patent; however, some of the claims of the '258 Patent require that imaging sensors be divided amongst, at least, two "rigid mount units." For example, claim 1 of the '258 Patent requires a "first rigid mount unit" having "a first and second imaging sensor," which have focal axes that pass through an aperture of the first rigid mount unit and a "second rigid mount unit" having "a third imaging sensor."

The '960 Patent is titled "Self-Calibrated, Remote Imaging and Data Processing System," and was filed on April 13, 2010. It is a continuation-in-part of the '258 Patent, and again names only Chester L. Smitherman as an inventor. The '258 Patent adds Figures 19-21 to the patent disclosure, which concerns a "sub-pixel area" of a multi-camera array. ('960 Patent, 4:29-40.) The '960 Patent teaches that in this "sub-pixel area," "the camera sensor grid bisects each pixel in the overlap areas **1904** and **1908**, which effectively quadruples the image resolution in these areas **1904** and **1908** via the mechanism of co-mounted, co-registered oversampling." (*Id.*, 21:43-47.) The '960 Patent claims incorporate this improvement. For example, claim 1 of the '960 Patent recites that "the first sensors image data *bisects* the second sensors image data in the first image overlap area." (*Id.*, 28:46-48 (emphasis added).)

The third continuation-in-part, the '822 Patent, is titled "Infrastructure Mapping System and Method." The '822 Patent was filed on August 21, 2012, and issued from a chain of applications, claiming priority to the '960 Patent chain. This time, in the '822 Patent, four inventors are identified: Chester L. Smitherman; Joseph McCoy; James Tilley; and Mohan Baro. The '822 Patent claims generally relate to subject matter similar to the prior applications, but recite a greater number of imaging sensors and/or multiple array axes. The '822 Patent also includes a number of new figures.

The fourth continuation-in-part, the '298 Patent, is titled "Self-Calibrated, Remote Imaging and Data Processing System," and was filed on February 21, 2013. It is a continuation of the '960 Patent (and thus has the same specification as the '960 Patent). Like the '960 Patent, the '298 Patent has claims reciting that the image data of one sensor "bisects" the image data of another sensor. (*See, e.g.*, '298 Patent, 28:46.) It also has claims similar to those of the '348 Patent, but with some additional details added. For example, claim 40 of the '298 Patent requires that the computer connected to the various components generates a "calculated longitude and calculated latitude value for a coordinate corresponding to at least one pixel in the array." (*Id.*, 32:23-28.)

IV. THE TERM "SELF-LOCKING [FLYING] PATTERN" IS INDEFINITE

A. "Self-Locking [Flying] Pattern" ('938 Patent, Claims 1, 11, 19, 24)

Claim Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"Self-locking [flying] pattern"	Plain and ordinary meaning	Indefinite

"Self-locking [flying] pattern" is indefinite. Claim 1 of the '938 Patent requires moving a vehicle in a "self-locking pattern." Claims 11, 19, and 24 similarly requires moving an "aircraft" in a "self-locking flying pattern." Movement in a "self-locking" pattern is one of the steps used to calibrate a sensor on the vehicle/aircraft. Thus, it is imperative that the fact-finder understand what this term means.

The four independent claims—claims 1, 11, 19, and 24—each place further restrictions on the "self-locking" pattern, but none define the term. In claims 1 and 11, the "self-locking" pattern must contain "at least three substantially parallel [travel/flight] lines out of a group of three or more lines" where at least one of the lines "is in an opposing direction to the other substantially parallel [travel/flight] lines."

Claim 19 imposes a different additional restriction on the "self-locking" pattern. There, the pattern must have "adjacent substantially parallel flight lines having a right outermost flight line, a left outermost flight line, and at least one inner flight line." Claim 19 further imposes the restriction that there be "at least one pair of adjacent substantially parallel flight lines in a matching direction and at least one pair of adjacent substantially parallel flight lines in an opposing direction."

Additionally, claim 24 (which is not asserted in this case) differs from claim 19 in that the flight lines expressly recited in the claim need not include the left and right "outermost flight line(s)," and thus would accommodate, for example, a set of interior adjacent substantially parallel flight lines.

Setting aside the term "self-locking," the claims impose restrictions of different scope on what the pattern must look like. Claims 1 and 11 would appear to potentially allow for the following flight pattern:



In this hypothetical pattern, the red lines meet the express claim language of claim 1 and the black lines are additional travel lines allowed by the claim. This pattern, assuming it met whatever requirements the term "self-locking" imposes, would meet the express requirements of claim 1, but would **not** comply with the requirements of claim 19 or claim 24, which impose a different set of requirements. In claim 19 and 24, there must be at least four flight lines and each

claim further requires that there be multiple pairs of lines that are adjacent one another. For example, it would appear that the following flight pattern would meet claim 19 and 24's express requirements:



It is black letter law that a claim term should have the same meaning throughout the claims. *See CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1159 (Fed. Cir. 1997) ("[T]he meaning of a term in a claim must be defined in an [*sic*] manner that is consistent with its appearance in other claims in the same patent.") (citing *Fonar Corp. v. Johnson & Johnson*, 821 F.2d 627, 632 (Fed. Cir. 1987)). In addition, claim terms should not be construed in a manner that renders them superfluous and unnecessary. *See Haemonetics Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 781 (Fed. Cir. 2010) (Notice to the public would be undermined "if courts construed claims so as to render physical structures and characteristics specifically described in those claims superfluous."); *see also Elekta Instrument S.A. v. O.U.R. Scientific Int'l, Inc.*, 214 F.3d 1302, 1307 (Fed. Cir. 2000) (holding that the claim language "extending between latitudes 30°–45°" did not include latitudes between 14° and 43° because that would "render[] the reference to 30° superfluous"); *see Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006) ("[C]laims are interpreted with an eye toward giving effect to all terms in the claim."). Thus, it is clear that the express language of the claims does not **define** the term "self-locking."

First, the claims do not purport to define the term, but instead use the open-ended term "comprising." Second, if the express language in the claims were definitional, then the term "self-locking" would have a different meaning in different claims and the term would also be superfluous, which cannot be right.

Thus, the question remains: What is a "self-locking" pattern and how would a skilled artisan know if a particular pattern is or is not "self-locking"? The short answer is that the '938 Patent provides no basis for a skilled artisan to determine whether or not a particular accused (or prior art) pattern is a "self-locking" pattern. A skilled artisan accordingly has no basis to determine the metes and bounds of the claims in the '938 Patent, and the claims are therefore *indefinite*.

Critically, the term "self-locking [flying] pattern" is not a term of art and thus has no "ordinary meaning." Therefore, Plaintiff's suggestion that the term needs no construction cannot be correct. On the contrary, it is a coined term whose meaning is known only to the inventor of the '938 Patent.

Patents inform the public about rights held by the patentee. Thus, the public notice function of the patent claims is of paramount importance. The patent statute embodies the public notice function in 35 U.S.C. § 112, ¶ 2, which requires that the specification of a patent "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." *Id.* "Because claims delineate the patentee's right to exclude, the patent statute requires that the scope of the claims be sufficiently definite to inform the public of the bounds of the protected invention, i.e., what subject matter is covered by the exclusive rights of the patent. Otherwise, competitors cannot avoid infringement, defeating the public notice function of patent claims." *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008); see *Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1581 (Fed. Cir. 1996)

("[T]he primary purpose of the requirement is 'to guard against unreasonable advantages to the patentee and disadvantages to others arising from uncertainty as to their [respective] rights.'") (quoting *Gen. Elec. Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 369 (1938)).

"[A] patent must be precise enough to afford clear notice of what is claimed, thereby appris[ing] the public of what is still open to them. Otherwise there would be [a] zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 909-10 (2014) (internal citations and quotation marks omitted). "A claim fails to satisfy th[e] statutory requirement and is thus invalid for indefiniteness if its language, when read in light of the specification and the prosecution history, 'fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.'" *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1369–70 (Fed. Cir. 2014) (quoting *Nautilus*, 572 U.S. at 901).

When a claim "might mean several different things and 'no informed and confident choice is available among the contending definitions,'" a claim is indefinite and thus invalid. *Nautilus*, 572 U.S. at 911 n. 8.

Applying these standards to the case at hand, it is clear that the claims are indefinite. The term "self-locking [flying] pattern" is not a term of art (and Plaintiff has not identified any extrinsic evidence that demonstrates otherwise). The term itself provides little help. The pattern must be "self-locking," which appears to suggest that it locks itself and does not need outside assistance, but what the pattern is "locking" to is left unstated.

The surrounding claim language is also of little help. The language describes (and claims) certain *non-exhaustive* aspects of the patterns, but the different claims require different features (using the transitional term "comprising") and thus cannot be definitional. For example, a claim

to an "airplane comprising an engine and propeller" does not define the term "aircraft" to mean, "any object with an engine and a propeller." On the contrary, such a hypothetical claim requires an airplane and *further requires* that the airplane have an engine and propeller. A boat with an engine and propeller would not infringe the claim. Likewise, here, it is not enough that the aircraft fly in a pattern that meets the express pattern descriptions of either claims 1 and 11, claim 19, or claim 24 that follow the "comprising" term. Rather, the pattern must also be "self-locking"—whatever that means (and presumably must have some aspects not recited elsewhere in the claim).

The specification likewise provides no definition of the term "self-locking" or explains what a "self-locking [flying] pattern" requires. For example, the specification states that Figure 4 depicts "a self-locking flight pattern of a preferred embodiment." ('938 Patent, 3:36-37.) Thus, Figure 4 (shown below) appears exemplary—but not definitional. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (an embodiment merely exemplary in nature is different from one defining the outer limits of the claim term).

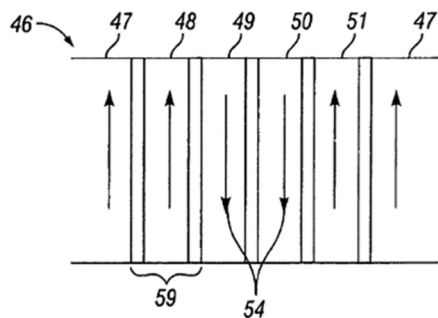


FIG. 4

(*Id.*, FIG. 4.)

The '938 Patent also states that a "self-locking flight pattern" is not required to have an even number of flight lines, which further suggests that Figure 4 is not definitional. (*Id.*, 6:46-52.)

The '938 Patent does identify a unique feature of the exemplary "self-locking flight pattern **46**" of Figure 4: it allows for interior flight lines "to have one adjacent flight line oriented in the same [] direction and the other adjacent flight line to be in an opposite crossing direction over the target area." (*Id.*, 6:67-7:7.) The '938 Patent, however, does not appear to state that this is the definition of a "self-locking [flying] pattern," and—perhaps more significantly—the '938 Patent does not describe how this flying pattern "locks" onto anything.

The prosecution history likewise provides no insight into the metes and bounds of the term "self-locking [flying] pattern." In the prosecution history, the applicant distinguished the prior art based on the specific details expressly recited in the claims. Thus, the applicant had no need to explain what "self-locking" meant because it relied on other limitations to distinguish the claims. Accordingly, the Examiner had no need to conclusively decide whether or not the prior art disclosed the "self-locking" aspect of the claims (given it was not the point of distinction over the prior art).

Hence, the claims containing the term "self-locking [flying] pattern" fail to satisfy the statutory requirement of particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. *See Interval Licensing*, 766 F.3d at 1370 ("A claim fails to satisfy th[e] statutory requirement and is thus invalid for indefiniteness if its language, when read in light of the specification and the prosecution history, 'fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.'") (quoting *Nautilus*, 572 U.S. at 901). The claim term "self-locking [flying] pattern" is therefore indefinite.

V. CONSTRUCTIONS FOR THE REMAINING TERMS IN DISPUTE

A. "Elevation Measurement Unit" ('348 Patent, Claims 1, 9, 16; '258 Patent, Claim 1; '960 Patent, Claim 1; '822 Patent, Claims 1, 22, 24, 29; '298 Patent, Claims 1, 36, 40, 41)

Claim Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"elevation measurement unit"	Plain and ordinary meaning	These terms should be construed in accordance with pre-AIA 35 U.S.C. § 112, ¶ 6 to mean: Function: measuring surface elevations. Disclosed Structure: EMU module 118

"Elevation measurement unit" requires construction. Although Plaintiff asserts that the term needs no construction, Plaintiff's position would improperly surrender claim construction to the jury, as a precise demarcation of the structure measuring surface elevation is necessary, *i.e.*, what structure is, in fact, covered by "elevation measurement unit." *See, e.g., O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1361-62 (Fed. Cir. 2008). Since "elevation measurement unit" invokes the means-plus-function provisions of pre-AIA 35 U.S.C. § 112, ¶ 6, Plaintiff's broad construction would improperly cover a limitless array of undisclosed structures.

Means-plus-function claiming occurs when a claim term is "expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof." Pre-AIA 35 U.S.C. § 112, ¶ 6. In such a case, a court construes the claim to cover the corresponding structure described in the specification "and equivalents thereof." *Id.* A claim, however, **need not** recite the word "means" to be construed in means-plus-function format.

In *Williamson v. Citrix Online, LLC*, the Federal Circuit clarified the application of pre-AIA 35 U.S.C. § 112, ¶ 6, when a claim does not recite the word "means":

The standard is whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. When a claim term lacks the

word "means," the presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to "recite sufficiently definite structure" or else recites "function without reciting sufficient structure for performing that function."

792 F.3d 1339, 1349 (Fed. Cir. 2015) (*en banc* in relevant part) (internal citations omitted).

Once a term is found to be in means-plus-function format, courts apply a two-step process to construe its scope. First, the court identifies the claimed function performed by that claim element. *Id.* at 1351. Then, the court determines what structure disclosed in the specification, if any, corresponds to the claimed function. *Id.*

Here, the term "elevation measurement unit" does not convey any specific structure for measuring surface elevations. ***This is the hallmark of means-plus-function claiming.*** As such, the term is a "black box," tantamount to the word "means." *Id.* at 1350-51. Indeed, "elevation measurement unit" has no commonly accepted definition to a person of ordinary skill in the art, (Ex. A, Abdullah Decl. ¶¶ 8-9); rather, the term is simply a generic description for any structure that measures elevations. *See Williamson*, 792 F.3d at 1351 (holding use of generic terms such as "mechanism," "element," "device," and other nonce words that reflect nothing more than verbal constructs are tantamount to using "means" because generic terms "typically do not connote sufficiently definite structure" and thus invoke § 112, ¶ 6).

Specifically, the claims here use "***unit***" as a generic, nonce word. As other courts have found, "[t]he term 'unit' in the claims is analogous to the term 'module' and other generic terms referred to as 'nonce' words that can substitute for 'means' in the context of § 112, sixth paragraph." *Samsung Elecs. Co., Ltd. v. Ibex Pt Holdings Co., Ltd.*, No. IPR2018-00093, 2018 WL 2085638, at *3 (P.T.A.B. May 3, 2018); *see also Wsou Investments, LLC v. Google LLC*, No. 6:20-cv-00571-ADA, slip op. at 2 (W.D. Tex. June 2, 2021) (finding "alerting unit configured to issue an alert" is means-plus-function limitation) (attached as Ex. B); *Diebold Nixdorf, Inc. v. Int'l*

Trade Comm'n, 899 F.3d 1291, 1301 (Fed. Cir. 2018) ("[T]he word 'unit,' which the [] patent uses to describe thirteen distinct components of the invention, does not, standing alone, connote any particular structure. Nor is sufficient structure imparted by modifying the word 'unit.'"); *SkyHawke Technologies, LLC v. DECA Int'l Corp.*, No. CV 18-1234, slip op. at 28 (C.D. Cal. Dec. 19, 2019) ("[W]here the term itself does not appear in the specification, is not commonly known as connoting a structure or class of structures, is comprised of the nonce term 'unit' and functional language . . . the Court finds the term subject to § 112 ¶ 6.") (attached as Ex. C); *Rhode & Schwarz GmbH & Co. KG v. Tektronix, Inc.*, No. CV 2:18-2402, slip op. at 19 (C.D. Cal. July 18, 2019) (finding "recording unit" to be means-plus-function limitation; "The term 'unit' is just such a verbal construct as it provides the reader with no specific structure on its own.") (attached as Ex. D).

As Plaintiff must concede, the prefix "elevation measurement" does not describe any definite structure; instead, "elevation measurement" merely describes the *function* of the claimed "structure." See *Williamson*, 792 F.3d at 1351 (holding the prefix "'distributed learning control'" d[id] not impart structure into the term "'module'" because those words "do not describe a sufficiently definite structure"); *Diebold Nixdorf*, 899 F.3d at 1297-1302 (affirming finding that "cheque standby unit" is a means-plus-function term); *SkyHawke Technologies, supra*, at 28 ("The term 'data collection unit' itself supports that its claimed function is data collection."). Moreover, none of the claims containing the term recites sufficient structure for the function associated with "elevation measurement." (See '348 Patent, claims 1, 9, 16; '258 Patent, claim 1; '960 Patent, claim 1; '822 Patent, claims 1, 22, 24, 29; '298 Patent, claims 1, 36, 40, 41.) Because "elevation measurement unit" merely sets forth the same "black box" apparatus as the word "means," the term is properly construed as a means-plus-function term.

Thus, turning to the first step in construing a means-plus-function term, the Court identifies

the claimed function. *Williamson*, 792 F.3d at 1351. The claimed function of "elevation measurement unit" is *measuring surface elevations*. All of the claims are directed to measuring surfaces, and either the language of each asserted claim or its written description expressly references "surfaces." (*See, e.g.*, '348 Patent, claims 1, 9, 16; '258 Patent, 17:50-53, 19:40-49; '960 Patent, 18:3-6, 20:1-3; '822 Patent, 14:39-47, 14:37-15:4, 25:5-8, 28:27-29, claims 22, 24, 29; '298 Patent, 18:3-6, 20:1-3, claims 36, 40.) This much is clear and cannot be the subject of any genuine dispute.

The court next looks to the specification to determine what structure, if any, corresponds to the claimed function. *Williamson*, 792 F.3d at 1351-52 (structure disclosed in the specification qualifies as "corresponding structure" if the intrinsic evidence clearly links or associates that structure to the function recited in the claims). Here, the specification of each patent teaches a single embodiment that has a structure for performing the function of measuring surface elevations. In particular, the structure taught by the '348, '258, '960, '822, and '298 Patents is "EMU module **118**." As disclosed in each patent: "The system may also include an EMU module comprised of LIDAR, SAR **118** or a forward and rear oblique camera array for capturing three dimensional elevation/relief data. The EMU module **118** can include a laser unit **120**, an EMU control unit **122**, and an EMU control computer **124**." ('348 Patent, 6:5-11, FIGS. 1-1A; '258 Patent, 5:35-40, FIGS. 1-1A; '960 Patent, 5:62-67, FIGS. 1-1A; '822 Patent, 6:57-62, FIGS. 1-1A; '298 Patent, 5:62-67, FIGS. 1-1A.) For example, below is Figure 1A of the '348 Patent, a version of which appears in each patent, showing "EMU module **118**":

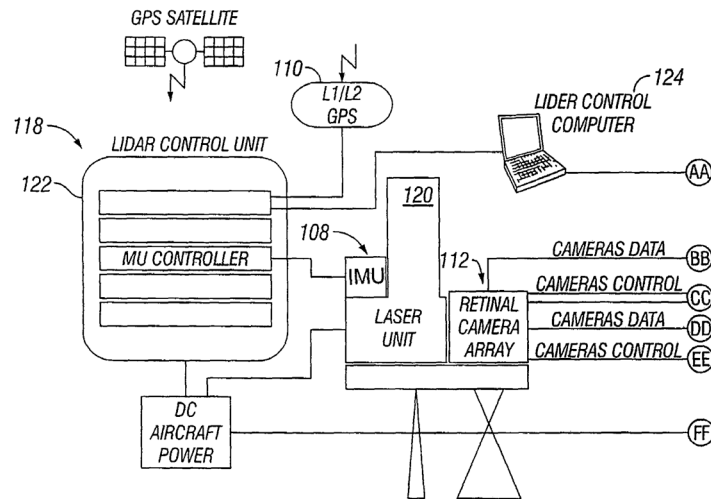


FIG. 1A

('348 Patent, FIG. 1A.)

No other embodiments are disclosed. Under controlling Federal Circuit precedent, Plaintiff's claims are limited to this embodiment and equivalents thereof. *See Williamson*, 792 F.3d at 1347 (holding that the scope of coverage under 35 U.S.C. § 112, ¶ 6 is limited to only the structure "described in the specification as corresponding to the claimed function and equivalents thereof").

As such, the Court should construe the term as a means-plus-function limitation.

B. "Aperture" ('348 Patent, Claims 1, 16; '258 Patent, Claims 1, 12, 16; '960 Patent, Claims 1, 16; '822 Patent, Claims 1, 21, 22, 24; '298 Patent, Claims 1, 16, 36, 41)

Claim Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"aperture"	Plain and ordinary meaning	"an opening formed in the surface of a housing through which light reaches the imaging sensors"

The term "aperture" requires construction because a lay jury may not understand what the term means and Plaintiff provided infringement contentions that call into question its

understanding of "aperture." Thus, while Defendants agree that the term "aperture" should take on its ordinary meaning, the jury should not be left to hear the term's ordinary meaning, from competing experts. The purpose of this construction is to offer clarity of the issues, reduce unnecessary disputes at trial, and to avoid juror confusion.

Thus, Defendants contend that the lay jury should be provided with a construction for that ordinary meaning, which is "an opening formed in the surface of a housing through which light reaches the imaging sensors." Defendants did not expect this proposal to be controversial and asked Plaintiff to agree with this construction and thus avoid Court intervention. Nonetheless, Plaintiff refused to agree with the construction, but (1) did not explain why it disagreed with the construction, and (2) declined to provide an alternative construction. To the extent Plaintiff agrees with this construction, it should be adopted. To the extent Plaintiff disagrees with any part of this construction, the Plaintiff should articulate its disagreement, so the Court may resolve it. *See O2 Micro'*, 521 F.3d at 1362 ("When the parties present a fundamental dispute regarding the scope of a claim term, it is the court's duty to resolve it.").

A construction would aid jury understanding because although the term may be well-known by those experienced with cameras or other optical or lens-based devices, lay jurors without such a background will not understand what an aperture is.

The construction proposed by Defendants is consistent with the claims, the specification, and the prosecution history. In the claims, there is "an aperture, disposed in the housing, having an intersection area therein." ('348 Patent, 22:12-13.) Further, each imaging sensor described has a "focal axis passing through the aperture within the intersection area" that intersects with the other sensor's focal axis. (*Id.*, 22:14-20.) This description is consistent across all patents with relevant language. Three of the patents describe: a "rigid mount unit . . . wherein a first imaging sensor and

a second imaging sensor each has a focal axis passing through an aperture in the first mount unit" ('258 Patent, 21:21-25; '960 Patent, 28:37-41; '298 Patent, 28:36-39.) The other patent describes: "a mount unit, . . . wherein a first imaging sensor, a second imaging sensor and a third imaging sensor each has a focal axis passing through an aperture in the mount unit" ('822 Patent, 38:1-5.)

The specification for each of the Asserted Patents describes various apertures in a manner that confirms the Defendants' proposed construction. In all patents, each specification states in exactly the same way: "The housing **304** further comprises an aperture **320** formed in its surface, between the imaging sensors and target **302**. Depending on the specific type of host craft, the aperture **320** may comprise only a void, or it may comprise a protective screen or window to maintain environmental integrity within the housing **304**." ('348 Patent; 7:63-8:2; '258 Patent, 7:12-17; '960 Patent, 7:39-44; '822 Patent, 8:44-50; '298 Patent, 8:39-44.) Further, "[t]he aperture **320** is formed with a size and shape sufficient to provide the imaging sensors **306** through **314** proper lines of sight to a target region **322** on terrain **302**." ('348 Patent, 8:8-10; '258 Patent, 7:22-25; '960 Patent, 7:50-53; '822 Patent, 8:55-57; '298 Patent, 7:50-52.)

Finally, the prosecution history does not provide any relevant guidance to construing the term, and thus neither confirms nor contradicts the proposed construction

C. "Imaging Sensor" ('348 Patent, Claims 1, 9, 16)

Claim Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"imaging sensor"	Plain and ordinary meaning	device capable of receiving and processing <i>passive</i> radiometric energy from a target area

"Imaging sensor" should be construed to mean "device capable of receiving and processing *passive* radiometric energy from a target area" because Plaintiff disclaimed a broader construction (i.e., to include *active* radiometric energy) during prosecution of the '348 Patent. *See Standard Oil*

Co. v. Am. Cynamid Corp., 774 F.2d 448, 452 (Fed. Cir. 1985) (when construing claims, a court must "exclude any interpretation that may have been . . . disavowed during prosecution in order to obtain claim allowance"). The claims and remainder of the specification confirm such disclaimer.

Many of the original claims of the '348 Patent required the use of both a first imaging sensor and a second imaging sensor in the system. During prosecution of the '348 Patent, the Examiner initially rejected the claims over a combination of references, including U.S. Patent Publ. No. 2002/0060784 ("Pack"), which disclosed an imaging device having both a *digital camera* and a *LIDAR system*. With regard to a system having a first imaging sensor and a second imaging sensor, the Examiner argued that it would have been obvious to "utilize the imaging device taught by Pack." (Ex. E, 12/7/04 Non-Final Rejection at 5.)

Although Applicant did not dispute that the digital camera of Pack was a first imaging sensor, Applicant *did* argue that "Pack fails to fairly teach or suggest the presence of a *second imaging sensor*." (Ex. F, 3/2/05 Amendment and Response at 22 (emphasis added).) Applicant further argued that, while Pack discloses the "use of a *digital camera* to collect *passive* spectral radiation, "the LIDAR unit of Pack was *not* a second imaging sensor as it was merely used to "collect elevation data of a surface." (*Id.* at 21 (emphasis added).) Thus, Applicant took the position that the LIDAR system of Pack was not an "imaging sensor" since it did not collect *passive spectral radiation*, and Applicant took that position to overcome a rejection, thereby disclaiming broader claim scope.

In addition, consistent with the prosecution history, the specification of the '348 Patent consistently uses the term "image sensors" interchangeably with "cameras" and other passive imaging devices. Specifically, the specification repeatedly refers to "imaging sensors **306** through **314**" as "cameras," (*see, e.g.*, '348 Patent, 7:48-52, 9:11, 9:21, 9:50-53, 9:58-59, 9:64-10:7), and

other devices that detect passive radiometric energy present in the environment (*id.*, 9:1-4). In contrast, the '348 Patent never describes an "imaging sensor" as a LIDAR unit or any other type of device that is capable of receiving and processing "active" radiometric energy.

For all these reasons, the Court should construe "imaging sensor" to mean "device capable of receiving and processing *passive* radiometric energy from a target area."

D. "Wherein the [First/Third] Image Sensor Data Biseects the [Second/Fourth] Image Sensor Data" ('960 Patent, Claims 1, 3, 16, 18; '822 Patent, Claims 13, 21; '298 Patent, Claims 1, 3, 16, 18)

Claim Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"wherein the [first/third] image sensor data biseects the [second/fourth] image sensor data"	Plain and ordinary meaning	wherein one corner of each pixel in the second image data set aligns with the center of each respective pixel in the first image data set

Defendants seek construction of the above wherein clause ("Biseects clause") because it is not likely to be readily understood and applied by a lay jury. *See O2 Micro Int'l*, 521 F.3d at 1360 ("[I]n many cases, the meaning of a claim term as understood by persons of skill in the art is not readily apparent.") (citing *Phillips*, 415 F.3d at 1312-13). Not construing this clause sets the jury adrift to reach its own conclusion of the meaning of the clause, or, worse, leaves the meaning to be explained by the parties' respective experts. *See NobelBiz, Inc. v. Global Connect, LLC*, 701 F. App'x 994, 997 (Fed. Cir. 2017) ("Allowing the experts to make arguments to the jury about claim scope was erroneous."). A more prudent course would be for the Court to construe the Biseects clause for the jury in accordance *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996) (holding "that the construction of a patent, including terms of art within its claim, is exclusively within the province of the court").

Defendants propose that the Court construe the Bisects clause to mean "wherein one corner of each pixel in the second image data set aligns with the center of each respective pixel in the first image data set." Defendants' proposed construction is supported by the intrinsic evidence and clarifies the scope of the Bisects Clause. *See Phillips*, 415 F.3d at 1314 (noting that the "proper definition is the 'definition that one of ordinary skill in the art could ascertain from the intrinsic evidence in the record'" (quoting *Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc.*, 375 F.3d 1341, 1351 (Fed. Cir. 2004))).

Remarkably, Plaintiff proposes that the Bisects clause requires no construction, indicating Plaintiff's belief that a jury will understand the meaning of this clause merely upon reading the language of the claim itself. *See O2 Micro Int'l*, 521 F.3d at 1361 ("A determination that a claim term 'needs no construction' or has the 'plain and ordinary meaning' may be inadequate when a term has more than one 'ordinary' meaning or when reliance on a term's 'ordinary' meaning does not resolve the parties' dispute."). That is unlikely.

Although a jury may understand each individual word in the Bisects clause, the meaning of the collection of terms together is not likely to be understood. For example, a particular juror may be familiar with terms such as "image," "sensor," "data," and even "bisects." But what the inventor meant by "image sensor data" **bisecting** other "image sensor data" is not likely to be understood and applied with any degree of certainty by that same juror. Moreover, without a construction, the jury is likely to use the term improperly in this context. For example, the jury may believe that the patent claim is referring to taking an image and breaking it in half, when such an understanding is not supported by the patent specification and is incorrect. In the patent, the bisecting is at **the pixel level**, not at the level of the entire image. In the patent, half of one pixel overlaps half of another pixel.

Accordingly, the parties have a genuine dispute regarding the scope of the Bisects clause, which this Court must ultimately decide rather than leave for the jury. *See O2 Micro Int'l*, 521 F.3d at 1362 ("When the parties present a fundamental dispute regarding the scope of a claim term, it is the court's duty to resolve it.").

For this clause, the prosecution history provides no guidance. The Bisects clause was first introduced in the original claim set as filed for the application that issued as the '960 Patent and retained in claim sets prosecuted in continuation applications that issued as the '822 and '298 Patents. The Bisects clause was neither argued nor amended during prosecution and, therefore, the Court's construction of the clause may rest on the language of the claims and disclosure of the specifications of the relevant patents. For instance, along with the newly introduced Bisects clause, the application for the '960 Patent also first introduced Figures 19, 20, and 21 and corresponding text of the specification (*see* '960 Patent, 21:8-28:2), both of which are also included in the '822 and '298 Patents.

The claim language provides context for the Bisects clause:

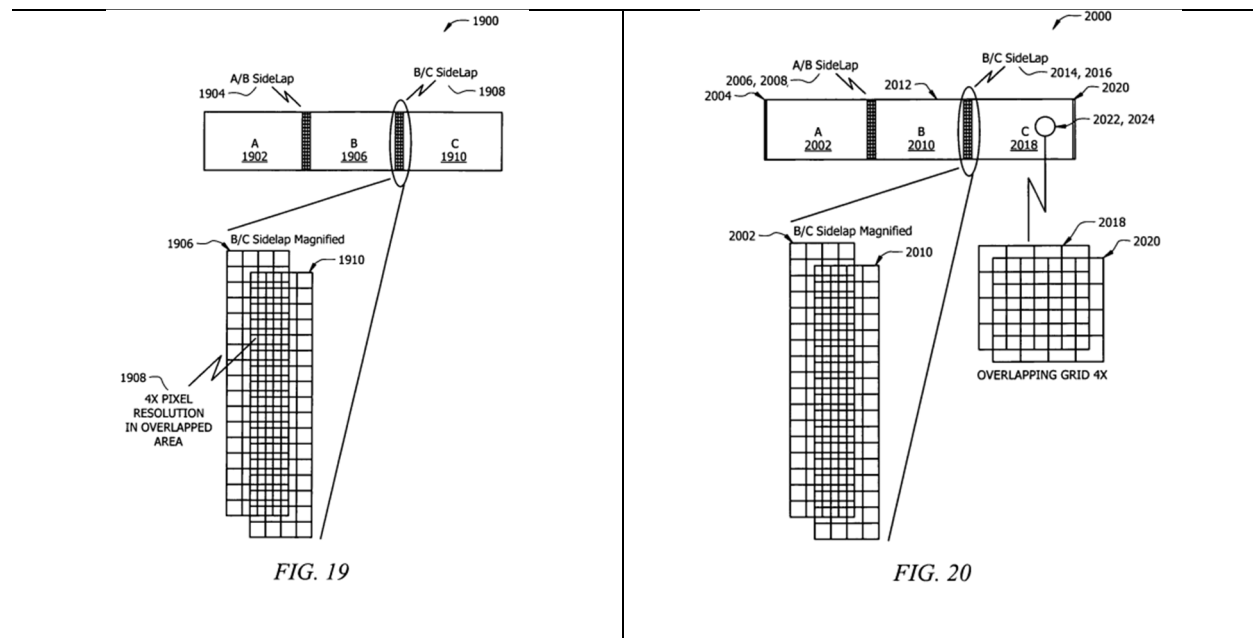
a first rigid mount unit affixed to the mount plate and having at least two imaging sensors disposed within the first mount unit, wherein a ***first imaging sensor*** and a ***second imaging sensor*** each has a focal axis passing through an aperture in the first mount unit and the mount plate, wherein the first and second imaging sensor each generates a first ***data array of pixels***, wherein each data array of pixels is at least two dimensional, wherein the first and second imaging sensors are ***offset*** to have a first image ***overlap area*** in the target area, ***wherein the first sensors image data bisects the second image data in the first image overlap area.***

('960 Patent, claim 1 (emphasis added); *see also id.*, claim 16; '822 Patent, claims 13, 21; '298 Patent, claims 1, 16.) Where third and fourth imaging sensors are employed, the claim language further recites: "wherein the third and fourth imaging sensors are aligned and offset to have a second image overlap area in the target area, ***wherein the third sensors image data bisects the***

fourth sensors image in the second image overlap area. ('960 Patent, claim 3 (emphasis added); *see also id.*, claim 18; '298 Patent, claims 3, 18.)

With reference to Figures 19, 20, and 21, the specification describes a multi-camera array, wherein each camera is offset from the others so that the pixels from the images produced by each respective camera "overlaps" the others producing "hatched areas" where the pixels from the respective camera images form closely woven grids. "In FIG. 19, the hatched areas labeled A/B and B/C sidelaps represent image overlap areas **1904** and **1908**, respectively. . . . In these sidelap areas **1904** and **1908**, the camera sensor grid bisects each pixel in the overlap areas **1904** and **1908**, which effectively quadruples the image resolution in these area **1904** and **1908**." ('960 Patent, 21:38-51; *see also id.*, 22:35-52; '822 Patent, 29:64-30:22; '298 Patent, 21:38-51, 22:35-52.)

The concept is clearer in view of the Figures themselves, where the depiction of "hatched areas," "sidelaps," and "overlap area" are more tangible to the reader:



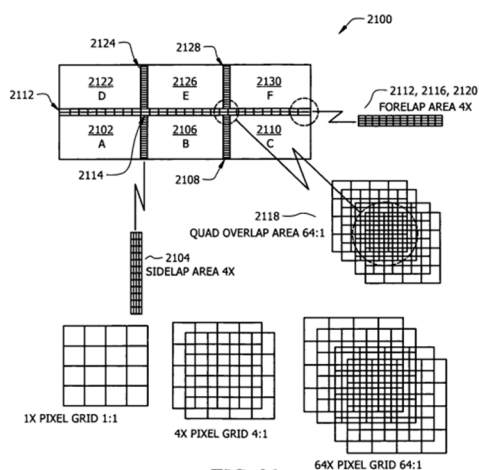


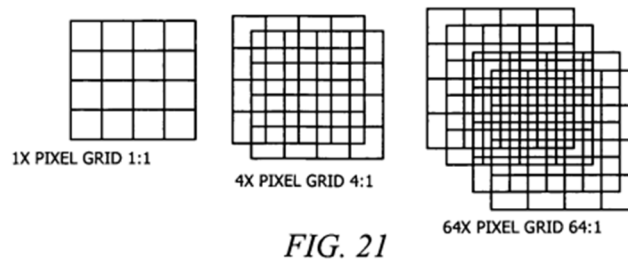
FIG. 21

('960 Patent, FIGS 19, 20, 21.)

The figures and written description explain fully what the claim language does not. The mere phrase "the first sensors image data bisects the second image data in the first image overlap area" does not adequately convey to a lay jury what a skilled artisan would understand from reading the specification. The term "bisects" would likely indicate to a lay juror that something, *e.g.*, a set of image data, is being split into two parts, or even two equal parts. But, that is not what is described in the specification, and the specification provides no support for such an interpretation. Rather, the description of the claimed invention is: that each camera sensor in a multi-camera array produces image data; that each set of image data is comprised of multiple pixels (represented by a grid where each square indicates an individual pixel); that each camera sensor is offset from the other camera sensors in the multi-camera array, such that a particular camera sensors set of image data (or grid of pixels) is offset from the camera sensor before it, and that, by doing so, the multi-camera array produces an overlapping grids of pixels where each pixel effectively becomes four pixels, "which effectively quadruples the image resolution in these [sidelap] areas **1904** and **1908**." ('960 Patent, 21:45-46.)

This is too much work for the term "bisects" without a construction. If Plaintiff had its way, it would leave the claim language alone and merely have its expert stand in the Court's shoes to tell the jury what the Bisects clause means. But, this approach is erroneous. *See O2 Micro Int'l*, 521 F.3d at 1362 ("[T]he parties' arguments regarding the meaning and legal significance of the 'only if' limitation were improperly submitted to the jury."); *see also NobelBiz*, 701 F. App'x at 997 ("Allowing the experts to make arguments to the jury about claim scope was erroneous.").

Defendants' proposed construction articulates precisely what Figure 21 illustrates below, "one corner of each pixel in the second image data set aligns with the center of each respective pixel in the first image data set." ('960 Patent, 21:38-51, 22:35-52; '822 Patent, 29:64-30:22; '298 Patent, 21:38-51; 22:35-52.)



Defendants' proposed construction, therefore, accurately captures what the Bisects clause connotes and should be adopted by the Court.

E. "In Communication With" ('258 Patent, Claim 1; '960 Patent, Claim 1; '822 Patent, Claims 1, 29; '298 Patent, Claims 1, 41)

Claim Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction
"in communication with"	Plain and ordinary meaning	"connected for the transfer of information"

In the claims, the term "in communication with" is used in the context of inanimate objects.¹ The elevation measurement unit, global positioning antenna, and the attitude measurement unit are all "in communication with" the vehicle (*see, e.g.*, '258 Patent, claim 1; '960 Patent, claim 1), while the computer is "in communication with" both measurement units, the antenna, and the imaging sensors (*see, e.g.*, '258 Patent, claim 1; '822 Patent, claim 1). Given that none of these devices can "speak" or literally "communicate" in the lay sense of that term, the jury would benefit from a construction.

The implication in the patents is that each of the devices has circuitry to provide or receive information, either by wires or wirelessly. As for wireless communication, the patents provide an example of using "industry standard GPS and IMU systems" that "input data via a potentially low bandwidth communication channel such as satellite phone, cell phone, RF, modem, or similar device." ('960 Patent, 27:62-66; '298 Patent, 27:62-66.) Therefore, the proper construction of "in communication with" is "connected for the transfer of information." *Sulzer Textil A.G. v. Picanol N.V.*, 358 F.3d 1356, 1366 (Fed. Cir. 2004) ("Thus, the district court normally will need to provide the jury in a patent case with instructions adequate to ensure that the jury fully understands the court's claim construction rulings and what the patentee covered by the claims."); *see also Control Res., Inc. v. Delta Elec., Inc.*, 133 F. Supp. 2d 121, 127 (D. Mass. 2001) ("In the end, claim construction must result in a phraseology that can be taught to a jury of lay people.").

Defendants requested that Plaintiff agree with this non-controversial construction. Plaintiff refused to agree, but (1) did not explain why it disagreed with the construction, and (2) declined to provide an alternative construction. Accordingly, this Court should adopt Defendants' construction, which will aid the jury in understanding the scope of the claims. To the extent

¹ All text concerning these terms is identical in each of the patents that use the term.

Plaintiff agrees with this construction, it should be adopted. To the extent Plaintiff disagrees with any part of this construction, the Plaintiff should articulate its disagreement so that the Court may resolve it. *See O2 Micro Int'l*, 521 F.3d at 1362 ("When the parties present a fundamental dispute regarding the scope of a claim term, it is the court's duty to resolve it."); *AFG Indus., Inc. v. Cardinal IG Co., Inc.*, 239 F.3d 1239, 1247 (Fed. Cir. 2001) ("It is critical for trial courts to set forth an express construction of the material claim terms in dispute, in part because the claim construction becomes the basis of the jury instructions, should the case go to trial.").

Defendants' proposed construction of "in communication with" flows directly from the specification. When communication between devices, or between devices and the vehicle, is discussed, the communication takes place over some sort of data link for the transfer of information. For example, the specification states: "[O]ne or more AMUs **108** that provide real-time yaw, pitch, and roll information that is used to accurately determine the attitude of the vehicle **100** at the instant of data capture are also *communicatively linked* to the computer console **102**." ('258 Patent, 5:8-11 (emphasis added).) The specification also states: "The system may also include global positioning systems that are *linked to* and *communicate with* the computer consoles." (*Id.*, 2:34-36 (emphasis added).) Further, the specification states: "A communications interface between the control computer console **102** and the vehicle autopilot control provides the ability to actually control the flight path of the vehicle **100** in real time." (*Id.*, 4:48-4:51.)

Finally, the prosecution history does not provide any relevant guidance to construing the term, and thus neither confirms nor contradicts the proposed construction.

VI. CONCLUSION

For the foregoing reasons, Defendants request that the Court find the term "self-locking [flying] pattern" indefinite and adopt Defendants' proposed constructions for the remaining terms in dispute.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a) on January 12, 2022 and was served via CM/ECF on all counsel of record.

/s/Ricardo J. Bonilla

Ricardo J. Bonilla